## In the Claims

Claims 1-17, 38-48 and 60-78 have been canceled without prejudice.

Claim 80 is amended.

Claims 18-37, 49-59 and 79-81 remain and are listed as follows:

1.-17. (Canceled))

18.    (Original) A multi-media editing method comprising:

defining a first data structure that represents a user-defined multi-media editing project;

providing a software-implemented matrix switch that is programmable to route multiple switch inputs to multiple switch outputs, at least two of the inputs being capable of competing for a single output during a common time period, the single output being configured to provide a data stream defined by the multi-media editing project;

processing the first data structure to provide a second data structure that contains data that can be used to program the matrix switch so that multiple switch inputs are routed to multiple switch outputs; and

operating on the second data structure so that no two inputs are routed to said single output during a common time period.

19.    (Original) The multi-media editing method of claim 18, wherein said providing of the software-implemented matrix switch comprises providing a switch having virtual input pins and virtual output pins, the virtual input pins being

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configured to receive individual data streams, the virtual output pins being configured to provide individual data streams.

20. (Original) The multi-media editing method of claim 18, wherein said processing of the first data structure comprises configuring the matrix switch so that it receives at least one source stream at one of its inputs.

21. (Original) The multi-media editing method of claim 20, wherein said configuring comprises building a collection of associated objects operably associated with the matrix switch and that are configured to process digital data to provide a source stream at one or more of the inputs.

22. (Original) The multi-media editing method of claim 21, wherein at least some of the associated objects comprise filters.

23. (Original) The multi-media editing method of claim 18, wherein said processing of the first data structure comprises providing at least one object configured to receive at least one output stream from the matrix switch, process the output stream to provide an input stream, and provide the input stream to an input of the switch.

24. (Original) The multi-media editing method of claim 23, wherein said object comprises a transition object that is configured to transition between at least one source stream and at least one other source stream.

25.    (Original) The multi-media editing method of claim 23, wherein said object comprises an effect object that is configured to operate on a source stream to produce a different source stream.

26.    (Original) The multi-media editing method of claim 23, wherein said object comprises a mix object that is configured to mix multiple audio or video source streams.

27.    (Original) The multi-media editing method of claim 18, wherein said defining of the first data structure comprises defining a hierarchical tree structure.

28.    (Original) The multi-media editing method of claim 27, wherein the hierarchical tree structure comprises nodes that represent tracks, each track being associated with one or more data stream sources.

29.    (Original) The multi-media editing method of claim 28, wherein the data stream sources with which one or more of the tracks are associated comprise video data stream sources.

30.    (Original) The multi-media editing method of claim 28, wherein the data stream sources with which one or more of the tracks are associated comprise audio data stream sources.

31. (Original) The multi-media editing method of claim 28, wherein the data stream sources with which one or more of the tracks are associated comprise both video and audio data stream sources.

32. (Original) The multi-media editing method of claim 18, wherein said processing of the first data structure to provide the second data structure comprises processing the first data structure to provide a grid structure,

the grid structure containing multiple rows, individual rows representing inputs of the matrix switch and being associated with individual data stream sources,

each row containing at least one value that is associated with an output associated with said single output of the matrix switch.

33. (Original) The multi-media editing method of claim 32, wherein said operating on the second data structure comprises changing at least one value in at least one of the rows of the grid structure.

34. (Original) The multi-media editing method of claim 18, wherein said processing of the first data structure comprises configuring the matrix switch so that it receives multiple source streams at multiple respective inputs at multiple times.

35. (Original) The multi-media editing method of claim 34, wherein said configuring comprises building one or more filter graphs that are individually configured to process digital data to provide multiple respective source streams,

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and associating one or more filter graphs with individual inputs of the matrix switch.

36. (Original) The multi-media editing method of claim 35, further comprising building multiple sub-graphs inside one or more of the filter graphs.

37. (Original) One or more computer-readable media having computer-readable instructions thereon which, when executed by a computer, implement the method of claim 18.

38.-48. (Canceled).

49. (Original) One or more computer-readable media having computer-readable instructions thereon which, when executed by a computer, cause the computer to:

represent a multi-media editing project as a first data structure;

process the first data structure to provide a second data structure containing data that defines an association between inputs, outputs and a time line defined by the editing project;

provide a matrix switch having multiple inputs and multiple outputs that correspond to the respective inputs and outputs of the second data structure; and

use the second data structure to program routing of the matrix switch's inputs to the matrix switch's outputs for the given time line.

50. (Original) The computer-readable media of claim 49, wherein the matrix switch has a single output that provides a data stream that represents the editing project.

51. (Original) The computer-readable media of claim 49, wherein the matrix switch has at least one feedback loop coupled between an output and an input.

52. (Original) The computer-readable media of claim 51, wherein the feedback loop contains a transition element having two or more inputs and a single output, the transition element being configured to transition between multiple data streams.

53. (Original) The computer-readable media of claim 51, wherein the feedback loop contains an effect element having an input and an output, the effect element being configured to operate on a first data stream to provide a second data stream that is different from the first data stream.

54. (Original) The computer-readable media of claim 49, wherein the first data structure comprises a tree structure.

55. (Original) The computer-readable media of claim 49, wherein the second data structure comprises a grid structure.

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56. (Original) The computer-readable media of claim 55, wherein the instructions cause the computer to change one or more data values within the grid structure to ensure that no two switch inputs are routed to a primary switch output at any one time.

57. (Original) The computer-readable media of claim 55, wherein the instructions that cause the computer to process the first data structure to provide the second data structure cause the computer to:

define a grid row for each of a number of data stream sources;

enter data values in each grid row, the data values being associated with a time period for which the data stream source desires to be routed to a primary output of the matrix switch; and

change at least one data value in at least a portion of a grid row if a determination is made that another grid row has an entry that indicates that its associated data stream source desires to be routed to the primary output of the matrix switch at the same time.

58. (Original) The computer-readable media of claim 57, wherein the instructions cause the computer to change said at least one data value responsive to a transition that is defined to occur between two data stream sources.

59. (Original) The computer-readable media of claim 57, wherein the instructions cause the computer to change said at least one data value responsive to an effect that is applied on a data stream source.

60.-78.  (Canceled).

79.  (Original) A multimedia system comprising:

an application program configured to enable a user to define a multi-media project in which multiple digital source streams can be combined;

a software-implemented matrix switch having multiple input pins and multiple output pins, the input pins being individually associated with inputs that can compete, during a common time period, for a particular output pin that is associated with the matrix switch, the switch being configured to receive, at its input pins, digital source streams;

a first data structure associated with the matrix switch and configured for use in programming the matrix switch to provide a routing scheme for routing input pins to output pins such that at any given time, only one input pin is routed to the particular output pin; and

a second data structure associated with and different from the first data structure, the second data structure representing a user-defined multi-media project and being configured so that the first data structure can be derived therefrom.

80.  (Presently Amended) The multi-media system of claim ~~80~~ 79, wherein the first data structure comprises a grid structure.

81.  (Original) The multi-media system of claim 80, wherein the second data structure comprises a tree structure.